



What is claimed is:

1. A method of performing natural language generation, the method comprising
the steps of:
selecting a reference grammar;
applying an input dependency tree to a tree choosing module for using a

stochastic tree model to select syntactic realizations for each node in the derivation tree;

producing a word lattice for the stochastically selected syntactic realization comprising all possible word sequences permitted by the input dependency structure, the chosen syntactic realizations, and the reference grammar; and

choosing a linear precedence output string of least cost from the word lattice.

- 2. The method as defined in claim 1 wherein an extended XTAG grammar is selected as the reference grammar.
- 3. The method as defined in claim 1 wherein the Viterbi algorithm is used to chose the output string from the word lattice.
- **4.** A natural language generator for translating an input dependency syntax tree into a natural language output, the generator comprising

a tree choosing module, responsive to the input dependency syntax tree, for stochastically selecting syntactic realizations for each node in the input dependency tree, the tree choosing module including a tree model database for use in selection;

an unraveling module, responsive to the stochastically selected tree-adjoining grammar trees created by the tree choosing module and including a predetermined reference grammar database for creating from the syntactic realizations a lattice of all possible linearizations of said trees using the reference grammar of said database; and

a linear precedence chooser module for selecting the most likely traversal through the lattice as the natural language output of the generator.

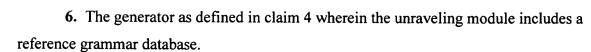
5. The generator as defined in claim 4 wherein the linear precedence chooser module utilizes the Viterbi algorithm to select the most likely traversal path.

1

2

1





- 7. The generator as defined in claim 6 wherein the reference grammar database
- 2 comprises an XTAG grammar database.